

Amendment to the Abstract

Please replace the abstract of the application, appearing on page 47, with the following rewritten abstract:

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-- A multiplexing and de-multiplexing system that may both use the same wavelength division multiplexing (WDM) device. For multiplexing, light sources provide a plurality of light beams having different wavelengths and the WDM forms a single light beam. For de-multiplexing, a light source provides a light beam having a plurality of different light wavelengths and the WDM forms a plurality of output light beams each having respective of the wavelengths. The WDM devices may particularly be formed from optically multi-dimensional planar gratings and cubical gratings which may diffract single wavelengths, sets of wavelengths, and ranges of wavelengths each with respect to one optical dimension present. The gratings may be discrete or integrated in the multiplexing or the de-multiplexing devices. Complex embodiments of the multiplexing system, such as an interleaver, and complex embodiments of the de-multiplexing system, such as a de-interleaver, can be formed using blocks of the gratings.

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